ABSTRACT OF THE INVENTION

The present invention relates to a bit rate control method for real-time video communication, which was developed in macroblock (i.e. MB) layer by utilizing a dynamic rate table. This table is designed offline with a training procedure by considering the MB complexity (i.e. SAD), quantization parameter (i.e. QP) and estimated coding bit counts. For each input MB, the rate control method utilizes its SAD value and the allocated number of bits to search the table to find the optimal QP value and encode the input MB by the optimal QP, and then utilizes the resulting coding bit count of the MB to update the rate table. Since the table will be automatically updated on a MB-by-MB basis every time after each macroblock being processed, it can rapidly track the local statistics of image blocks and control the bit rate accurately. In addition, the method only requires fixed-point computation, thus it significantly lowers down the cost in hardware implementation.